



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/589,573	06/07/2000	Michael C. Lewis	945P/BP1413	1314

7590 10/21/2002

Sawyer Law Group LLP
P O Box 51418
Palo Alto, CA 94303

EXAMINER

NGUYEN, KIMBINH T

ART UNIT	PAPER NUMBER
----------	--------------

2671

DATE MAILED: 10/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/589,573

Applicant(s)

LEWIS, MICHAEL C.

Examiner

Kimbinh T. Nguyen

Art Unit

2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8,10-12,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,10-12,14,15 and 508 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The request filed on 10/9/02 for a Request for Continued Examination (RCE) under 37 CFR 1.114 is acceptable.
2. Claims 1-3, 5-8, 10-12, 14 and 15 are pending in the application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watkins et al. (4,918,626) in view of Foran et al. (5,684,939).

Claim 1, Watkins et al. discloses a) determining if a portion of at least one object intersects a current position of the plurality of positions and providing an output if the portion intersects the current position (col. 4, lines 11-19); b) providing a mask (mask bits) for the position if the position intersects the current position, the mask indicating an extent to one portion occupies the area of the current position (col. 9, lines 18-26); Watkins teaches coverage mask (bit mask) and does not teach the mask indicating an extent of polygon coverage within each pixel; however, Foran et al. discloses the mask indicating an extent to one portion occupies the area of the current position (col. 15, lines 57-59), using the mask to provide antialiasing for the portion at the current position

(col. 15, line 52 through col. 16, line 15); repeating steps (a) -(c) for each remaining object at the current position; d) repeating steps a) - e) for remaining position of the plurality of positions at step (d) is performed for the current position; thereby allowing the graphical image to be rendered position by position; and wherein each of the plurality of positions is a pixel and wherein the current position is a current pixel (update the color value assigned to a pixel based on changes to the pixel's coverage) on the display (based on the pixel screen coordinate) (col. 15, lines 60-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Foran's teaching into the Watkins' method, because it would improve antialiased image data with improved pixel supersampling for developing resolution of the display on a pixel by pixel basis.

Claim 2, Watkins discloses using at least one mask to blend information relating to at least one portion of the subareas (col. 9, lines 56-65).

5. Claims 3, 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watkins et al. (4,918,626) in view of Foran et al. (5,684,939) and further in view of Kuchkuda et al. (5,872,902).

Claim 3, Kuchkuda et al. discloses summing the information of subareas to provide a resultant; dividing the resultant by the number of subareas (col. 5, lines 11-18). It would have been obvious to one of ordinary skill in the art to include this feature, because it could improve a method for rendering of fractional pixels for anti-aliasing and pixel blending technique by calculating pixels of complex coverage areas.

Claim 5, Kuchkuda et al. discloses f) removing the portion if the portion is obstructed (col. 16, line 52). It would have been obvious to one of ordinary skill in the art to include this feature, because removing a hidden surface that could improve rendering visual images for anti-aliasing.

Claim 6, Kuchkuda et al discloses g) sorting each portion based on the z-value (col. 18, lines 2-5). It would have been obvious to one of ordinary skill in the art to include this feature, because applying z sorting that could improve rendering visual images for anti-aliasing and pixel blending technique.

Claims 7 and 8, Watkins discloses repeating steps a) through c) (col. 2, lines 16-19) and Kuchkuda discloses steps f) through g) for each object (col. 16, lines 50-53) and for the positions.

It would have been obvious to one of ordinary skill in the art to include this feature, because rendering pipeline that would improve blending and antialiasing rendering algorithms used in the system.

6. Claims 10-12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watkins et al. (4,918,626) in view of Foran et al. (5,684,939) and Eckart (5,408,606).

Claim 10, Watkins discloses display a plurality of positions, the position having an area (col. 4, lines 15-46); Foran discloses a processor coupled with the display, an interpolator coupled with the processor (figs. 4a, 4b); further, Eckart discloses objects are rendered by the interpolator and the mask position by position in raster order (col. 8, lines 8-20; col. 9, lines 20-23); the processor provides the output for objects intersecting the current position before providing an output for objects intersecting a subsequent position; and Foran discloses each of the plurality of positions is a pixel and the current position is a current pixel on the display (col. 15, lines 60-66). It would have been obvious to one of ordinary skill in the art to incorporate the Eckart's teaching into Watkins and Foran's teachings to display and output data in a raster order, because using raster scan order, it would improve in processing graphics data, the system would render faster.

Claim 11, which is an apparatus claim comprising the claimed element corresponding to the claim 2, and is rejected on the same basis set forth in claim 2.

Claim 12, which is an apparatus claim comprising the claimed element corresponding to the claim 3, and is rejected on the same basis set forth in claim 3.

Claim 14, which is an apparatus claim comprising the claimed element corresponding to the claim 6, and is rejected on the same basis set forth in claim 6.

Claim 15, Foran discloses a removal unit coupled with the processor and interpolator (fig. 4b), in response to the output and without determining a precise axial position of the portion, the obstructed object identifies the portion is visually obstructed and removes the portion is obstructed (col. 9, lines 1-10); and Kuchkuda discloses sorting the portion based on the z value (col. 18, lines 2-5). It would have been obvious to one of ordinary skill in the art to include this feature, because applying hidden surface removal and z sorting based on z value that could improve anti-aliasing method.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kimbinh Nguyen** whose telephone number is **(703) 305-9683**. The examiner can normally be reached **(Monday- Thursday from 7:00 AM to 4:30 PM and alternate Fridays from 7:00 AM to 3:30 PM)**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Art Unit: 2671

Washington, D.C. 20231

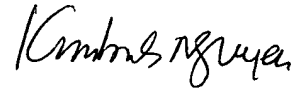
Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Part II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the Technology Center 2600 Customer Service Office
whose telephone number is (703) 306-0377.

October 18, 2002



Kimbinh Nguyen

Patent Examiner AU 2671